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ABSTRACT

During the past few years vocational and technical education has been under increased pressure to account for expenditures and to justify programs. The purpose of this publication is to review and present information relative to the evaluation of personnel in vocational education in order to assist those responsible for evaluation in the selection and implementation of systematic, and effective methods of evaluation. Discussed in detail are: planning for evaluation of personnel, criteria for personnel evaluation, measurement and data collection instruments, measuring the product of education, data collection, and analyzing and reporting data. Emphasis is placed on the need for a systematic approach that will provide continuous feedback to improve the effectiveness of instruction in the vocational program. (For companion documents covering facilities evaluation, program evaluation, and student evaluation, see CE 000 988, CE 000 990, and CE 001 153.) (DS)

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PERSONNEL EVALUATION

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PERSONNEL EVALUATION
IN
VOCATIONAL AND TECHNICAL EDUCATION

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FOREWORD

Vocational and technical education has enjoyed high visibility during the past few years and with it increased pressure to account for expenditures and to justify programs. As a result, educators are ever-alert for effective means of evaluating their educational programs. This publication and its three companion documents (*Program Evaluation in Vocational and Technical Education*, *Facilities Evaluation in Vocational and Technical Education*, and *Student Evaluation in Vocational and Technical Education*) provide educational practitioners with a review and synthesis of the most important works in evaluation as it applies to vocational and technical education.

In *Personnel Evaluation in Vocational and Technical Education*, the author reviews the process involved in identifying criteria for personnel evaluation, cites considerations in instrument selection, provides examples of effective instruments, and suggests techniques for collecting valid data.

The profession is indebted to J. Marvin Robertson for his scholarship in the preparation of this report. Recognition is also due Gordon Law, Department of Urban Education, Rutgers--the State University; and Donald L. Rathbun, Associate Director, American Vocational Association for their critical review of the manuscript prior to final revision and publication. Paul E. Schroeder coordinated the publication's development, and Alice J. Brown and Paula Kurth provided the technical editing.

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INTRODUCTION

The purpose of this publication is to present information relative to the evaluation of personnel in vocational education. It is assumed that, irrespective of how formal or informal the method is, what evidence is collected or analyzed, or what decisions result, vocational education personnel are evaluated. Students, parents, other teachers, administrators, and the public evaluate and form judgments. In addition, the Congress and state legislatures evaluate the outcome of teaching vocational education each time funding legislation is considered.

The information in this publication was selected to assist those responsible for evaluation in selecting and implementing systematic, valid, and effective methods of evaluation. The author's bias of a systems approach to comprehensive evaluation operating as a subsystem is reflected throughout. The anticipated audience includes local and state administrators, teacher educators, program managers, and those with primary evaluation responsibilities.

The publication begins with rationale and purposes of personnel evaluation, concentrating on the contributions of individuals to the total system of education rather than on systems of teaching or systems of vocational education.

The second section reviews planning and development of evaluation criteria. Instrumentation selection is discussed and several instruments are critiqued. Product measures are cited as one means of evaluating personnel. The final section reviews data collection, analysis, and reporting.

It would be impossible to review the research and literature relevant to the evaluation of personnel in a paper of this length. The intent was to select a wide range of materials summarizing alternatives. The user is encouraged to go beyond this publication and the bibliography if the need warrants.

Purpose of Personnel Evaluation

The purpose for evaluation is determined in relation to the goals of the educational system. The design for evaluation should include methods of data collection and analysis, communication with the persons involved, decision-making, and systematic assessment of how the evaluation system works.

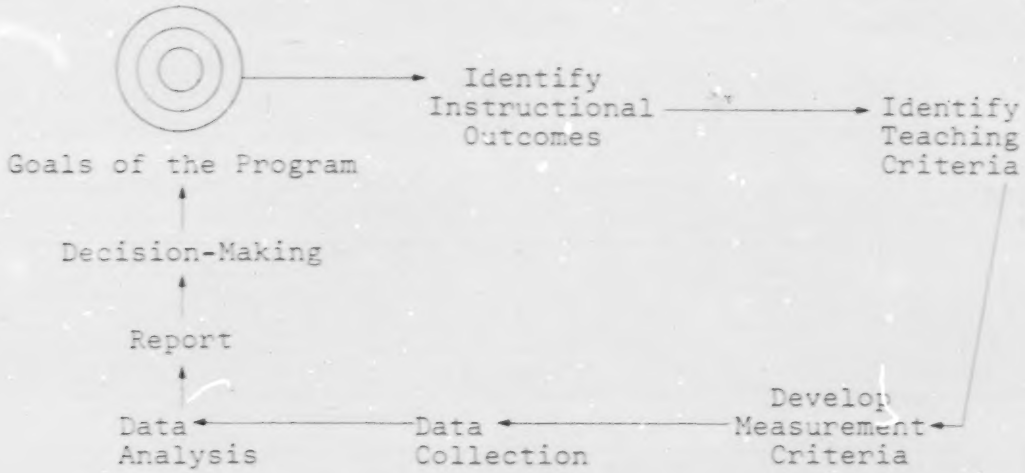

FIGURE 1. A Personnel Evaluation Model

Evaluation of the contribution of individuals within an educational system is different than an assessment or evaluation of the educational program. The former examines the contribution of individual output, procedures, and implementation. The latter looks at the total program.

The advantage of examining the effectiveness of individual performance is that better inferences can be made about the total system from individual performance than about individual performance from the performance of the total system. For example, knowledge of each individual's performance in a vocational program allows one to infer something about the total productivity of the program. Knowledge of each individual's performance also allows for more specific identification of strengths and weaknesses in the total program.

The design for evaluation will depend to a degree on the purposes for evaluating personnel. Some purposes of teacher

evaluation were identified by Bolton (1971):

1) To improve teaching, including out-of-classroom activities as well as classroom instruction (this purpose is not limited to teacher behavior but implies any actions taken to improve teaching systems, the teaching environment, or teacher behaviors).

2) To supply information for modification of assignments (including placement in another position, reduction of load, promotion to a leadership position, or termination of employment).

3) To reward superior performance.

4) To protect individuals or the school system in legal matters (including both the protection of teachers against a capricious new administrator and the protection of the school district and children against a harmful teacher).

5) To validate the selection process.

6) To provide a basis for career planning and individual growth and development of the teacher (including professional degrees and in-service training programs).

To Improve Teaching. There is general agreement among educators that the most important purpose for evaluating personnel is the improvement of instruction ("Teacher Evaluative Procedures," 1966; Heald and Moore, 1968; National Education Association, 1964; Poliakoff, 1973). In the 1964 National Education Association (NEA) study, superintendents reported that the chief use of personnel evaluation was "to aid in improving instruction."

Poliakoff (1973) reports a growing trend to evaluate administrators' job performance utilizing a job target approach, performance goals, or management by objectives. The approach focuses on the improvement of a person's job performance in a non-defensive atmosphere. In five states, administrators must be evaluated to comply with state law.

To Supply Assignment Information. The second major use of teacher evaluation reported by superintendents (National

Education Association, 1964) was to supply information for assignments including reappointment, permanent appointment, and promotion.

To Reward Staff. Less than 25 percent of the superintendents utilized evaluative data to increase salary rewards for staff (National Education Association, 1964). Some authors (Anthony, 1968; Simon and Boyer, 1967; Howsam, 1963) suggest that teachers' major objection to this purpose is the subjective nature of the evaluations. They suggest using objectively obtained measurements of specific behavior which have been related by research to the accomplishment of specific pupil outcomes. Teachers also resent being classified into general categories of excellence, since excellence is specific to a situation as well as to a person.

For Legal Protection. The evaluation of teaching within a district serves as the district's protection when it is held accountable for its established system. Recent court cases involving rights of individuals to fair dismissal procedures, and open hearings and fair hiring legislation involving equal opportunity employment regardless of race, religion, or sex make evaluation essential for legal reasons. Smith and Tyler (1942) reported some time ago that the emphasis on the legal aspects of teacher evaluation can be viewed negatively by teachers unless they realize that their own protection against unjust charges is assured.

To Validate Selection. Although not always recognized, evaluation validates the personnel selection procedures of the educational system. Evaluation should be designed to link information analyzed during the selection process with later performance. Vocational school administrators should consider involving supervisors in both selection and evaluation to help them understand how the two are related.

To Promote Self-Improvement. Closely related to the superintendent's goal for the improvement of instruction is the teacher's own purpose for evaluation, to promote self improvement. Howsam (1963) states that evaluation can become the basis of planning with the teacher for individual growth and development since most evaluation procedures assume that each teacher is interested in improving his or her teaching.

Defining the Purpose

Planning a specific evaluation system for personnel should begin with closely defined goals for the educational

program and evaluation purposes that relate directly to the overall program goals. It is essential that all staff be aware of and understand each purpose. All potential purposes should be discussed openly and thoroughly, and should not be ignored just because there are critical issues involved or because their accomplishment may precipitate conflict. For example, one purpose might be to provide a basis for sound administrative decisions regarding reemployment or promotion. Some may believe that accomplishment of this purpose would decrease cooperative relationships between administrators and other staff. The decision should be made and the evaluative purpose discussed and clarified in writing so that all staff understand the basis for the evaluation. Bolton states:

> Morale cannot be high if staff members are fearful or hostile. Since unknowns contribute to fear, evaluation programs which have written statements of purpose that are clear, precise, and complete are more likely to produce a sound basis for open communication and cooperative relationships than programs designed around ambiguous or unwritten purposes (1971:C-1).

PLANNING FOR EVALUATION OF PERSONNEL

Planning the system for evaluating personnel would include the following steps:

1) Identify the program goals,

2) Establish what is expected of personnel,

3) Determine means of measurement,

4) Design data collection,

5) Design methods to compare what occurs with what is desired,

6) Determine who should be involved,

7) Provide for training of evaluators,

8) Time sequence activities, and

9) Assess the evaluation system.

All personnel to be evaluated should be involved in the design of the evaluation system from the beginning. Some educators would also involve any others concerned with the quality of instruction such as students, parents, vocational advisory councils, and prospective employers of graduates.

The involvement of personnel to be evaluated in the design of the system is based on the assumptions that: (1) A more effective and relevant plan will develop, (2) personnel will have more commitment to the procedures, (3) personnel will know what they are expected to do, and (4) personnel will know what is to be evaluated.

School districts that have irvolved teachers in planning have found that output and procedural goals for individual teachers are better understood and attained when they are cooperatively developed and written in precise terms, than when they are unilaterally determined in establishing goals. The teachers are more committed to the goals and procedures.

In addition to teachers, administrators should be involved and it may be productive to begin with evaluation of administrators. Teachers will be more amenable to evaluation when they are convinced that administrators are willing to be participants.

Poliakoff (1973) reports that in the job performance evaluation design: "Partnership begins with the development of teachers and administrators of job descriptions and evaluation criteria, procedures, and forms. In several states, this cooperative relationship is part of a job targets approach described previously."

Redfern (1963:24) describes a methodology for planning appraisal of teaching performance based on job description. The planning process is summarized as follows:

"Tooling-Up"

Exploratory Contacts with:

- Board of Education
- Administrative Staff
- Teaching Staff

To Determine

Need for Appraisal

a) To know better and more accurately how effective teaching performance is
b) To enable teachers to "know how they stand"
c) To make appraisal a more systematic and professional process

Purposes of Appraisal

a) To assess status and quality of teaching performance
b) To identify aspects of performance needing improvement
c) To stimulate growth and development

Process of Appraisal

a) To define the nature of a teacher's job
b) To establish primary job targets plus criteria for judging other areas of performance
c) To indicate process of making judgments
d) To clarify role of appraiser; appraiser
e) To determine purpose of self-appraisal; evaluation by appraiser
f) To show purpose of appraisal conference

Results of Appraisal

a) To be better aware of the quality of teaching performance
b) To strengthen performance where needed
c) To be able to report to the Board of Education the status of teaching performance
d) To provide "evidence" required for termination of incompetent personnel

CRITERIA FOR PERSONNEL EVALUATION

A criterion is defined as a standard or level of attainment against which comparisons can be made. In the evaluation of personnel, a criterion also pertains to standards dealing with behavior and the results of behavior, and to assess the attainment of some process or outcome objective.

When combined with evidence at a specific level of attainment, the criteria for each program goal or objective can be stated much as a behavioral objective. The combination of goal, criterion, evidence, and acceptable attainment level clearly defines what is expected of each individual.

Determining Criteria

Bolton (1971) suggests that evaluation criteria be developed from what is considered important in teaching. This becomes the basis for developing:

1) Specific teacher behaviors and results of behavior desired,

2) Ways to measure teacher behaviors and results, that is, criteria measurement, and

3) Comparisons of measurements and desired outcomes.

Who Determines Criteria?

Ryans (1957) suggests that criteria be determined by a group of experts or jury of authorities consisting of:

1) The totality of the known group of authorities or experts (e.g., all of the principals and supervisors in the school district, all members of a teachers' professional organization, or all college teachers of a specified subject matter). Of course, such a procedure usually is not feasible unless the totality of experts is relatively small.

2) A random sample from the roster or membership list of a known group of authorities.

3) A purposive sample drawn from the totality of authorities as defined.

4) A sample of individuals who have been specifically trained to make authoritative judgments regarding the criterion (e.g., job analysts or trained observers).

Ryans (1957) suggests that method three is the weakest even though methods one, two, and four do not insure valid criterion description. Inadequate statements of what is important in personnel behavior often result from using biased judges.

School districts may utilize some combination of teachers, principals, supervisors, students, board members, and parents working together. Such a method may have a positive effect on morale. A strong teacher organization may demand a voice in selecting authorities to decide on criteria.

Involving a broad range of individuals concerned with the quality of education may result in more accurately defined criteria, may improve the morale of professional staff, may improve support in the community, and may improve credibility with employers of vocational graduates. Regardless of how goals, criteria, and evidence for personnel evaluation are established, output and procedural goals are more likely to be understood and attained when they are cooperatively developed and are written in discriminating behavioral terms.

Procedures for Criteria Development

Ryans (1957) lists six general techniques for acquiring information from people to determine what is important in teaching.

1) Free response--statements of what is important and the degree of importance, based upon the general impressions held by various members of the educational community.

2) Check list response--individuals indicate what is important and the degree of importance on a previously compiled list of desired behaviors and outcomes.

3) Position analysis--detailed systematic description of what is important for success and the degree of importance by individuals trained in carrying out such an analysis.

4) Critical incidents description--detailed descriptions of actual incidents and behavior that have been observed by experts to be "critical" in learner growth and development. (Note: This technique primarily deals with teacher behavior as opposed to learner outcomes.)

5) Time sampling--detailed tabulation of teacher behaviors based upon systematic observation and recording, with special attention to the conduct of observation during representative samples in time.

6) Psychophysical methods--members of the jury determine what is important and the degree of importance using such methods as ranking and paired comparisons.

In education the first two techniques are most often used but are weakest from an objective and rational viewpoint. The method holding the most promise is the position analysis technique. Palmer (1970) supports this with research on improving the selection process using a completed position analysis outline.

Performance as Criteria

Guidelines for a performance-based or a job target technique are increasingly available. Demke (1971) and DeVaughn (1971a), after extensive contact with school personnel and the literature on evaluation, have outlined competencies which the administrator of the future must possess. Each competence is defined in terms of specific and observable behaviors. DeVaughn (1971b) developed a similar manual to evaluate teacher performance.

Job analysis techniques have long been used in vocational education as a methodology of defining curriculum needs. The technique has not been applied to personnel conducting vocational programs to the same extent. With the emphasis on competency based teacher education and performance measured by outcomes, job analysis techniques should receive increasing attention.

Need for Systematic Criteria Development

It is strongly recommended that a systematic and comprehensive approach be used to develop criteria. A rational analysis of relevant criteria is a key element of an effective system of personnel evaluation. The systematic approach is strongly recommended by Guion (1964), Ryans (1957), and Brogden and Taylor (1950).

Evaluation of personnel behavior and learner outcomes can meet with success only to the degree that criterion judgment is based on reliable information regarding the essential attributes and behaviors involved. Such information must be based on carefully defined and rigorously controlled evaluative research and not on personal opinion or bias (Turner and Fattu, 1960).

Generalizability of Criteria

Flanders (1970) states that although the relationship of teacher behaviors to student outcomes is usually limited to a specific situation, some behaviors have precipitated desirable outcomes in more than one type of situation. Students seem to profit from a teacher who:

1) Accepts and uses ideas and opinions of pupils;

2) Is flexible and adjusts behavior and strategies to situations and students;

3) Views teaching as a complex task which requires goal setting, individual student assessment, and decision-making in terms of immediate and long-range problems; and

4) Provides students with a framework within which to interpret information.

Generalizability of some teacher behavior allows the vocational educator to rely on research in the common areas and concentrate on identification of the uniqueness of each specific area of vocational education. With the wide variety of specialized subject matter in vocational education and the ever-changing target populations and manpower requirements, identification of the unique teacher behaviors in each specialization will be a large task. Any help from research in other content areas should be welcomed.

MEASUREMENT AND DATA COLLECTION INSTRUMENTS

Measurement techniques are central to the acquisition of data for personnel evaluation. The instruments used influence the evaluation by: (1) ordering the available data, (2) reducing the error of informal human observation, and (3) influencing the kind of information to be gathered. In considering what data is to be gathered, it is necessary to consider the type of measurement to use.

Schalock (1969) summarized the need for instruments to minimize human error: "In the absence of instruments for the extension of the senses or for the control of conditions, human observations are liable to error. Instruments are a means for approximating more closely the property under observation." He concludes: "Teacher evaluation is dependent upon measurement as a basis for information gathering, because it is through measurement that the evaluator ascertains the quantity or quality of something."

Selecting Instruments

Measures and/or instruments should be selected to fit the purpose of the evaluation. Identify the measurement techniques and strategies which provide the data desired. Such a statement may seem obvious. Yet, too often choices are made on the basis of familiarity with or easy availability of instruments rather than because of their appropriateness.

Lyons (1970) has suggested four practical considerations for decisions related to the kinds of measures to use or develop:

1) Cost Factor-Priorities must be determined for the kinds of data needed and decisions made to allocate money among these priorities.

2) Time Factor-Some measures take a great deal of time to use and to develop properly; and if not enough lead time is available, the use of such instruments will not be feasible.

3) Source Factor-It does no good to decide on a particular instrument that would do the job, allocate appropriate resources, and then find out it is not possible to collect data because no data source is available.

4) "Taboo" Factor-An otherwise satisfactory instrument can meet with resistance if it conflicts with local traditions or customs.

Adequacy of Instruments

In addition to the practical considerations, one should consider the characteristics that indicate the adequacy of any instrument. Lyons (1970), Schalock (1969), Kerlinger (1964), Ryans (1957), Stufflebeam, et al. (1971) and others describe those as:

1) Relevance or Validity--the extent that the instrument measures what it says it does.

2) Reliability--the consistency or reproducibility of the measure or the degree to which the instrument maintains stability over time.

3) Fidelity--the degree to which the response to the instrument parallels the true or actual performance (e.g., skill tests in vocational education have a greater degree of fidelity than do paper and pencil tests).

4) Ease of administration--involves the practicality of the instrument such as its availability, scoring ease, and time to administer.

Data collected to evaluate personnel in vocational education may be analyzed and interpreted with more confidence if the evaluation process includes instruments that: (1) fit the evaluation purpose and criteria, (2) do an adequate measurement job, and (3) are implemented accurately.

Examples of Instruments

The kinds of instruments that have been developed and used to evaluate personnel are numerous. In this section some general instrument types and categories will be discussed and some sources of additional information will be identified.

When beginning to search for instruments, the purpose should be kept clearly in mind. This will allow the search to be more efficient and the probability of selecting the correct type much improved. No method of evaluating personnel has been used more than rating scales. Domas and Tiedeman (1950) contain several major headings devoted to rating scales in a 1006-item annotated bibliography. Remmers (1963) identifies types of scales and sources of information in the *Handbook of Research on Teaching*.

Ryans (1960) developed the "Classroom Observation Record" for extensive research on the characteristics of teachers. Each item is carefully defined and instructions given for raters. Ryans' summary of training for raters illustrates that rating scales are not primarily a paper-and-pencil device but depend on the rater, judge, or observer.

Ryans' bipolar adjective scale may remind the reader of the semantic differential technique originated by Osgood (1957). The semantic differential is a flexible device, simple to administer, widely used, and adapted to rigorous

research. DeVaughn (1971) has developed a manual for developing evaluation standards and instruments for rating administration performance.

Barrett (1966) discusses rating scales, scale building, raters, and the quality of ratings. Rating scales are discussed with special reference to purposes of the evaluation. Emphasis is on precepts for good scales and the need to use words in scales that will communicate.

A wide variety of methods of merit rating utilized in industry are discussed in *Rating Employee and Supervisory Performance* edited by Dooher (1950). Several examples of rating forms are included in the appendix of that work.

McKeachie (1971) analyzed a number of studies that utilized student evaluation of faculty at the college level to identify common factors. A student opinionnaire was also developed. Simpson and Seidman (1962) developed illustrative items that could be used to develop instruments for student evaluation of teaching. Illustrations are included for open-end, checklist, and rating scale instruments. The techniques could be easily adapted for other uses. The annotated bibliography included in Chapter Three allows the reader to select additional references.

Critique of Process Instruments

A growing trend in education is the movement away from instrumentation related to "how teachers teach" to the product or results of teaching. McNeil states:

> Appraisal and improvement of teaching require a definition of good teaching, because priorities among criteria are changing. Achievement of pupils in desired and desirable ways is a much more valuable indicator that good teaching has taken place than the actions of teachers independent of consequences on learners. Methods of teaching are not to be prized but appraised.

He continues:

> Sociologists speak of certain occupations as having ascriptive positions, meaning by this

> that the holder of the position attained and maintains his job on categorical grounds rather than on the basis of achievement. Devoting many class hours to preparation or displaying great effort in a task would be examples of categorical grounds. . .many professions are moving from an emphasis upon ascription to an emphasis upon results--there is less concern about how someone goes about his work but much more interest in <u>what</u> follows from that activity...(1971:B).

Medley (1963) states: "No fallacy is more widely believed than the one which says it is possible to judge a teacher's skill by watching him teach."

Biddle (1964) reports that generally, the results of research using rating forms have been poor and contradictory.

Poliakoff (1973) reports that the job targets approach was adopted by 25 percent of the school systems who reported administration evaluation procedures in a 1971 survey by the National Education Association. Most of the systems were small (25,000 - 50,000 pupils). Systems with more than 100,000 pupils generally used more traditional rating methods.

Davis (1964) summarizes a key issue: "Unfortunately, in most appraisal systems, the teacher rather than the teaching is most often noted."

MEASURING THE PRODUCT OF EDUCATION

Student Outcomes

Cohen (1969) summarizes the current attitude toward product measures of evaluating educational personnel: "Student gain toward specific learning objectives should be recognized as the ultimate criterion in assessing effects of teachers and teaching situations."

Measures of student outcomes or accomplishment include how students think, perform, and feel. Bolton (1971)

identifies the traditional measures as: (1) knowledge and ability measures (what a person knows), (2) skill performance measures (what a person can do), (3) attitudinal measures (what a person feels or desires), and (4) interest measures.

Vocational educators tend to support student outcome measures of teacher effectiveness with identifiable skill performance such as typing speed and accuracy, welding performance, and sales production. The ultimate measure is sometimes considered to be satisfactory placement in employment for which the student was trained. Vocational and career education programs are established to promote career development, job skill acquisition, and employment. One of the advantages of measuring pupil growth is that it is a direct measure of the outcomes that are desired.

Bolton summarizes the disadvantages:

> For one thing, there is immediate growth and there is long-term growth. The behavior of a teacher may contribute much to immediate learning of a pupil but may have a long-term effect on attitudes and behavior. Or conversely, short-term academic gains may be obtained at the expense of long-term negative attitudes which prevent later learning.
>
> Another disadvantage is the difficulty of adequately controlling the situation so that growth can be attributed to the behavior of a given teacher rather than to a wide range of uncontrolled conditions which impinge on learning. Because of this problem, consideration should be given to the effect of a succession of teachers on a pupil's achievement. This should not be done "in lieu" of examining the student achievement obtained as a result of individual teachers, but should be in addition to this analysis (1971:F-6).

Bjorkquist and Finch reviewed and critiqued product measures used to evaluate vocational-technical programs. Their comments relate to program evaluation but seem pertinent if the same kind of student outcomes are to be used to evaluate personnel effectiveness in vocational education. They conclude:

> Based upon this critique it appears that job satisfaction, worker rating, salary, social class identification, and additional training measures are of limited usefulness as a product-type program evaluators. It is, however, felt that the job analysis, skills survey, mobility, course values, and unemployment measures are well utilized in an evaluation schema.
>
> Unfortunately, some of the most useful product evaluation data are difficult to collect... (1969:72).

In a related article discussing process measures in evaluation of occupational education Finch and Bjorkquist state:

> Product measures used for evaluation often cannot be linked to instructional processes. This reduces the sensitivity of product measures and increases the possibility of contamination by extra-instructional occurrences. Such factors as the student's native ability, extracurricular involvement, and other learning experiences may affect accurate measurement of program outcomes.
>
> Process measures, on the other hand, taken during the instructional program, may be used as more direct assessments of program effects...(1970:37).

Job Target Approaches

Poliakoff (1973) reports a growing trend to use job target or management by objective approaches to evaluate educational personnel. The supervisor and the teacher (or any combination of evaluator and evaluatee) agree on target job performance, kinds of evidence, and level of attainment at the beginning of the evaluation period. Evidence is gathered during the period and a conference held at the end to reach agreement on the degree of attainment. Such a system may utilize complicated instrumentation or virtually no instrumentation.

A supervision by objectives model is a key element in the accountability and appraisal system advocated by McNeil. He describes the system as:

> Briefly, supervision by objectives is a process by which a supervisor and a teacher agree in advance on what they will accept as evidence that the teacher has or has not been successful in changing the skills, competencies, or attitudes of his students. The agreement is drawn up before the teacher acts and is designed to counter the prevailing practice of trying to make an "ex post facto" judgement of ends... (1971:36).

Redfern (1963:31) proposes a management-oriented system that utilizes a job target or performance-based design.

He outlines the process as the appraisee and appraiser establishing performance targets by:

1. Define scope (definition) of teacher's job.
   - (a) System-wide vs. "tailor-made" for individual.
   - (b) One or more "major" targets.
   - (c) Procedure for working on "target areas".

2. Agreement upon criteria to be used in appraising other areas of teacher's job.
   - (a) Identification of expectations of appraiser.
   - (b) Procedure for making evaluation judgments.
   - (c) Basis of appraiser's final judgments both on "major targets" and other areas of appraisal.

3. Explanation of mechanics of appraisal
   - (a) Forms and records
   - (b) Visitations
   - (c) Other bases of appraisal
   - (d) Timetable of accomplishment

Competency Based Approaches

Schmeider (1973) reports administrative or legislative support for competency based certification in 14 states with 11 other states actively working on legislation. A national commission is directing its efforts toward research and development in this area. The trend indicates more emphasis on identification of competencies and measures of performance of those competencies.

Houston (1972) identifies six approaches that may be used separately or in combination to determine competencies:

1) Task analysis
   The role of the teacher is described by listing the tasks he is expected to perform, and from this a competency listing is devised.

2) Course content
   While perhaps the easiest and most expedient approach, it severely limits the potential for program revitalization.

3) Pupil outcomes
   Desired pupil outcomes are specified: Then the conditions in a school which bring about these outcomes are delineated; the competencies needed by teachers in such a setting outlined; and finally the necessary teacher training stipulated.

4) Needs assessment
   A needs assessment of local community conditions is conducted; then an examination is made of pupils, schools, and teacher competencies before specifying the training.

5) Theoretical model
   A theroetical position is identified and the teacher education program logically and deductively built from that position.

6) Cluster approach
   Designs first identify a number of program areas, then deductively reduce them to statements of greater and greater specificity until finally behavioral objectives are derived.

Several studies have identified desired competencies of teachers in vocational subjects. Courtney and Halfin (1969) developed a factor analysis of teaching competencies for several areas of occupational education. Crawford (1967) has defined competencies for teachers of distributive education. Harris (1971) researched competencies of teachers of business education. Cottrell, et al. (1971) identified competencies of six major fields of vocational education.

Relation of Personnel and Program Evaluation

When a system is designed to evaluate personnel performance, student growth, or program outcomes, personnel evaluation becomes an integral part of the evaluation program for the entire educational system. The same measures of success for the program and the outcome measures of student progress become the measures of successful performance by personnel. In a sense, the system achieves its goals when each individual employee and student achieves his or her goals.

A school system that opts for outcome or performance measures to evaluate personnel will likely need to opt for some form of management by objectives. The individual responsible for evaluation of personnel by performance, will likely be involved in a comprehensive evaluation and management model.

Summary of Measurement Modes

In summary, the definition of criteria and measurement for personnel evaluation in vocational education fall into three categories. Bolton (1971) describes them as follows:

1) In-classroom behavior of the teacher, as perceived by students, the teacher being evaluated, other teachers, administrators or supervisors, and paraprofessionals, such as teacher aides.

2) Out-of-classroom behavior, as perceived by students, the teacher, other teachers, administrators or supervisors, teacher aides, and other personnel, such as cooks and custodians.

3) Student accomplishment, as measured by teacher-made tests, standardized tests (achievement, attitude, or skill performance), student self-report devices, observations of student behavior (by teacher, outside observer, parent), student products or projects.

DATA COLLECTION

The data collection system and techniques should be related to the purposes of personnel evaluation. Data collected as a means of improving instruction may not equally serve other purposes such as promotion, salary increments, or professional growth of the individual. Focus should be first on the major purpose, then examine the system to identify adjustments needed to serve other functions.

After the needed information is identified, the following steps should be followed: (1) identify where the information can be acquired, (2) determine what the information will look like, (3) determine the sample of information to acquire, (4) identify who will collect the data, and (5) assess the training required for persons collecting data.

Observing Classroom Behavior

Observation of classroom behavior can be divided into the use of systematic techniques and the use of checklists or rating scales. Systematic techniques generally count specific occurrences to analyze interaction which checklists and rating forms are used to record the judgments of the observer.

Classroom Interaction Analysis. Probably the best known procedure is Flanders' Interaction Analysis System (Flanders, 1970). Verbal descriptors are used by observers to express what has been seen. Simon and Boyer (1970) describe 79 different observation schedules available that can be adopted for use in evaluation.

Rating Scales and Checklists. In practice, rating scales and checklists are more likely to be used than are interaction techniques. The major advantage of rating scales and checklists is that the observer may consider a variety of clues before making a judgment. However, a delay in recording can be a major source of errors. It is easier for an observer to identify clues to judge the very poor or the very good than to differentiate in the middle range. A clustering of rankings in the middle range may tend to occur.

One caution should be noted. It is the observer who makes judgments on measuring. The checklist or rating scale is merely a convenient means of recording judgments of the observer.

Perception and Evaluation. Griffiths (1956) discusses the perceptual problems in observing human behavior. He states: "What a person observes is not necessarily the 'real' thing. All of us are so conditioned by our past experiences that we react to clues which are congruent with our past but which are not necessarily what we are looking at in the present..."

Griffiths considers perception from the transactional approach. The elements are a transaction that utilizes the content of an individual's interaction with the environment as a basis; the concept of the personal behavior center which has meaning as a person entering into a transaction from his own unique position; and externalization as perceiving as externalizing our own experience. One tends to see what one has experienced.

Observers of teacher behavior and classroom behavior should develop a means of checking their own reliability against the observation of other trained observers and the teacher being observed.

Scheduling Observation Time. The major restraint to observation for evaluation is the time required. Most teachers comment that too little time was used to observe to obtain an adequate sample of classroom behavior.

A procedure to develop observation time guidelines might include:

1) Specification of time per week available,

2) Determination of the length of observation and time needed to make a written record,

3) Determination of the number of teachers to be observed annually,

4) Determination of the number of times to observe each teacher annually,

5) Comparison of available and needed time, and

6) Schedule, change goals, modify procedure, or acquire more resources.

National Education Association (1964) studies indicate that probationary teachers are observed for evaluation more often than tenure teachers. Yet, 85 percent of the probationary teachers were observed no more than twice annually. Obviously, observation for evaluation in the classroom is a time consuming task.

Training the Observer. The observer must provide accurate and valid data if the evaluation system is to operate. The observer should receive extensive training to memorize the behavioral categories, master the recording form, make accurate judgments, and demonstrate that his records are consistent from one observation to another. Observations should be checked with other observers to get consistent and accurate data.

ANALYZING AND REPORTING DATA

Analysis in Relation to Goals

Data analysis and interpretation is accomplished within the framework of goals, criteria, and evidences or measures. Byram and Robertson (1971) suggest that the first step in analysis be determination that all available information and data are at hand and that the data is complete and valid.

A procedure for analysis in relation to the goals or objectives and the criteria is summarized in Figure 2 (Byram and Robertson, 1971):

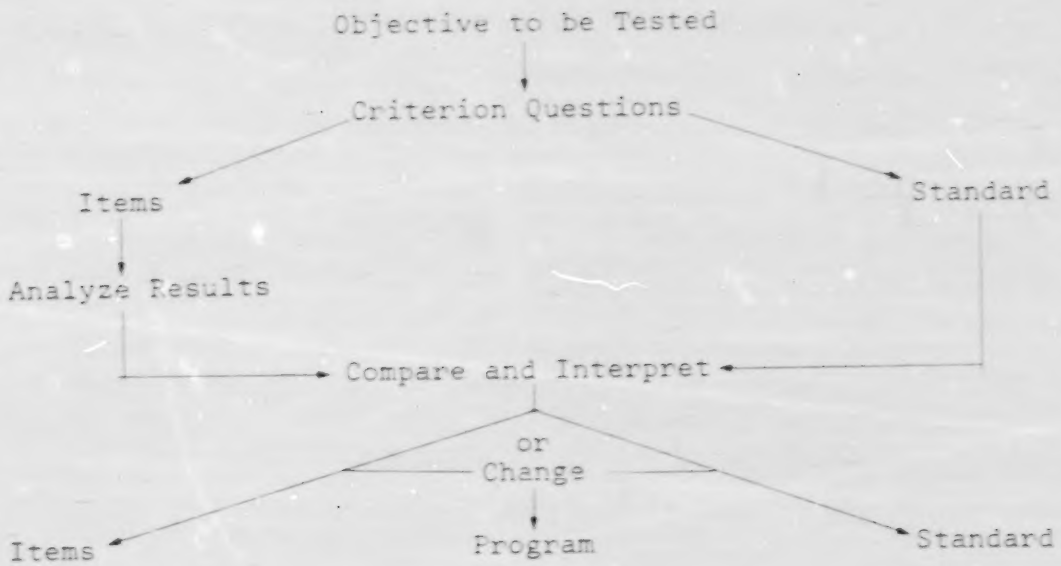

FIGURE 2. Process of Relation Analysis

Resources for Processing Data

Consultants may be employed to assist in the statistical analysis and interpretation of data if desired. They can also help to check the reliability and validity of data. Consultants with expertise in tests and measurements may be helpful if personnel evaluation is based, in part, on student outcomes.

Data processing may be available in larger school systems or vocational-technical schools to speed analysis. Sometimes the state department of education or a university can provide computer assistance.

Deciding What Data to Analyze

Earlier in this publication it was suggested that all who are affected by evaluation be included in the planning and in deciding what is important in teaching. Robertson (1972) summarizes the caution needed to prevent data analysis from expanding or redirecting the personnel evaluation system at a critical state:

One may be tempted to analyze the data in a number of other ways. Imagination in use of data is commendable. However, in this case the goals to be measured for progress toward attainment, the criterion questions and the quantitative measures should have been carefully developed and accepted in the early stages of evaluation. Analysis in this system should be limited to the specific purposes. Imagination should be used to suggest changes in the next evaluation cycle.

Reporting Results

If the prime focus of a personnel evaluation system is to improve education, then the results of the evaluation must be fed back into the system to bring about change. One basic premise of modifying human behavior is the effect and timeliness of feedback. Personnel evaluation is more apt to provide feedback to improve instruction if it is given more often and is related directly to the program rather than to personalities. The feedback should be about items that can be changed by the individual getting feedback.

The place of feedback may be likened to the radio beam used by pilots to keep the airplane on course. The radio beam emits from the "goal" and any direction from the direct course to that goal is immediately apparent to the pilot. An evaluation system for personnel in vocational education that could provide such useful feedback would be ideal.

SUMMARY

An effective personnel evaluation system requires a systematic approach that will provide continuous feedback to improve the effectiveness of instruction in the vocational program.

Steps to consider in developing an effective system include:

1) Identification of goals for the vocational education system and/or program,

2) Identification of the purposes for which personnel will be evaluated,

3) Identification of a general model for evaluation,

4) Planning the specifics of the evaluation model selected,

5) Developing criteria for personnel performance,

6) Developing measurement and instruments,

7) Data collection,

8) Assessing the evaluation system, and

9) Providing feedback to improve programs.

In this era of accountability in education, administrators may be encouraged or even required to develop systems of evaluating personnel. When the emphasis is on improvement rather than fault-finding, educators tend to perceive evaluation positively.

Evaluation designed to improve instruction in vocational programs will improve as the evaluation is based on clear organizational goals, resources adequate to do an effective evaluation, and clarity in the relationship between the organizational goals and the evaluative criteria.

Evaluation will be. Should it not be formally designed to improve instruction?

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